

Heights of rivers referred to zeros of gages—Continued.

Stations.	Distance to mouth of river.	Danger line on gage.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
<i>Arkansas River—Con.</i>	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
Fort Smith, Ark.	845	22	26.4	9	6.5	4	13.6	19.9
Dardanelle, Ark.	250	21	23.5	10	7.4	5	13.3	16.1
Little Rock, Ark.	170	23	24.5	11	9.4	5	15.6	15.1
<i>White River.</i>								
Newport, Ark.	150	26	28.0	13	12.2	31	19.1	15.8
<i>Yazoo River.</i>								
Yazoo City, Miss.	80	25	23.1	1	12.0	31	16.7	11.1
<i>Red River.</i>								
Arthur City, Tex.	688	27	14.8	15	4.9	7	9.4	9.9
Fulton, Ark.	505	28	21.5	17	8.0	5	13.0	13.5
Shreveport, La.	449	29	12.6	19, 20	8.0	8	10.3	4.6
Alexandria, La.	139	33	12.9	23	7.8	1	10.7	5.1
<i>Ouachita River.</i>								
Camden, Ark.	340	39	26.9	31	9.3	5	19.1	17.6
Monroe, La.	100	40	21.2	24, 25	20.0	14-18	20.7	1.2
<i>Atchafalaya Bayou.</i>								
Melville, La.	100+	31	33.4	1	30.6	31	32.0	2.8
<i>Susquehanna River.</i>								
Wilkesbarre, Pa.	178	14	2.2	1	0.0	(10-19) (23-31) (16, 17) (20-31)	0.6	2.2
Harrisburg, Pa.	70	17	5.2	21	2.5	(16, 17) (20-31)	3.1	2.7
<i>W. Br. of Susquehanna.</i>								
Williamsport, Pa.	35	20	7.3	20	2.0	17	3.1	5.3
<i>Juniata River.</i>								
Huntingdon, Pa.	80	24						
<i>Potomac River.</i>								
Harpers Ferry, W. Va.	170	16	9.0	19	2.3	2	3.5	6.7
<i>James River.</i>								
Lynchburg, Va.	257	18	5.1	10	1.0	29-31	2.0	4.1
Richmond, Va.	110	12	2.8	11	0.3	28	1.0	2.5
<i>Roanoke River.</i>								
Clarksville, Va.	155	12	4.9	31	2.2	29	3.0	2.7
Weldon, N. C.	90	27	11.4	18	7.8	20, 30	8.8	3.6
<i>Cape Fear River.</i>								
Fayetteville, N. C.	100	38	17.3	15	4.2	29, 30	7.7	13.1
<i>Lumber River.</i>								
Fairbluff, N. C.	10	6	4.7	1	2.8	31	3.8	1.9
<i>Edisto River.</i>								
Edisto, S. C.	75	6	4.0	1-3	2.5	22-26	3.1	1.5
<i>Pedee River.</i>								
Cheraw, S. C.	145	27	13.0	15	2.5	28, 29	5.0	10.5
<i>Black River.</i>								
Kingstree, S. C.	60	12	5.8	1	1.7	23-31	3.4	4.1

Heights of rivers referred to zeros of gages—Continued.

Stations.	Distance to mouth of river.	Danger line on gage.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
<i>Lynch Creek.</i>	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
Effingham, S. C.	35	12	6.6	1-3	3.2	31	4.5	3.4
<i>Santee River.</i>								
St. Stephens, S. C.	50	12	7.9	1	4.3	31	6.7	3.6
<i>Congaree River.</i>								
Columbia, S. C.	37	15	1.4	8	0.4	21	0.9	1.0
<i>Watauga River.</i>								
Camden, S. C.	45	24	12.1	15	4.4	6	7.1	7.7
<i>Waccamaw River.</i>								
Conway, S. C.	40	7	6.3	9	2.8	31	4.7	3.5
<i>Savannah River.</i>								
Calhoun Falls, S. C.			4.0	1.7	3.1	30	3.6	0.9
Augusta, Ga.	130	32	10.4	8	7.3	31	8.6	3.1
<i>Broad River.</i>								
Carlton, Ga.			3.2	5-7	2.5	29, 30	2.8	0.7
<i>Flint River.</i>								
Albany, Ga.	80	20	5.4	1, 27	0.9	20-22	2.9	4.5
<i>Chatahochee River.</i>								
West Point, Ga.	239	20	4.8	24	3.0	22, 23	3.7	1.8
Eufaula, Ala.	90	30						
<i>Coosa River.</i>								
Rome, Ga.	225	30	4.0	1	2.0	20, 30	3.1	2.0
Gadsden, Ala.	144	18	5.4	1	1.4	29	3.1	4.0
<i>Alabama River.</i>								
Montgomery, Ala.	265	35	9.8	1	3.0	31	5.2	6.8
Selma, Ala.	212	35	13.9	1	4.2	31	7	9.7
<i>Tombigbee River.</i>								
Columbus, Miss.	285	33	0.4	1	-1.4	31	-0.6	1.8
Demopolis, Ala.	155	35	7.1	3	1.8	31	3.9	5.3
<i>Black Warrior River.</i>								
Tuscaloosa, Ala.	90	38	7.9	1	1.5	29	4.1	6.4
<i>Columbia River.</i>								
Umatilla, Oreg.	270	25	17.1	31	7.8	6	12.2	9.3
The Dalles, Oreg.	166	40	23.4	31	12.4	7	19.4	16.0
<i>Willamette River.</i>								
Albany, Oreg.	99	20	8.4	2	5.2	18, 22	6.7	3.2
Portland, Oreg.	10	15	16.8	31	8.1	7	11.5	8.7
<i>Sacramento River.</i>								
Red Bluff, Cal.	241	23	4.8	1, 2	0.9	30	2.3	3.9
Sacramento, Cal.	70	25	20.0	1	15.2	31	17.3	4.8

¹Record for 29 days.

CLIMATE AND CROP SERVICE.

By JAMES BERRY, Chief of Climate and Crop Service Division.

The following extracts relating to the general weather conditions in the several States and Territories are taken from the monthly reports of the respective sections of the Climate and Crop Service. The name of the section director is given after each summary.

Rainfall is expressed in inches.

Alabama.—The mean temperature was 75.9°, or 4.8° above normal; the highest was 100°, at Elba on the 18th, and the lowest, 48°, at Hamilton on the 19th. The average precipitation was 2.03, or 1.86 below normal; the greatest monthly amount, 4.80, occurred at Marion, and the least, 0.06, at Thomasville.—*F. P. Chaffee.*

Arizona.—The mean temperature was 65.8°, or 5.9° below normal; the highest was 106°, at Fort Mohave and Parker on the 12th, and the lowest, 5°, at Prescott on the 3d. The average precipitation was trace, or 0.16 below normal; the greatest monthly amount, 0.10, occurred at Holbrook, while none fell at many stations.—*W. G. Burns.*

Arkansas.—The mean temperature was 72.9°, or 3.0° above normal; the highest was 96°, at Jonesboro on the 15th, and the lowest, 44°, at Pond on the 5th. The average precipitation was 6.45, or 1.97 above normal; the greatest monthly amount, 13.36, occurred at Moore, and the least, 2.37, at Canton.—*E. B. Richards.*

California.—The mean temperature for the State, obtained by weighting the reports from 281 stations, so that equal areas have about the same weight, was 59.9°, or 4.3° below the May normal for the State, as determined from 198 records; the highest was 110°, at Volcano Springs, San Diego County, on the 13th, and the lowest, 13°, at Bodie, Mono County, on the 1st and 30th. The average precipitation for the State, as determined by the records of 298 stations, was 0.73; the deficiency, as indicated by reports from 160 stations which have normals, was 0.23 the greatest monthly amount was 4.80, at Bowman's Dam, Nevada County, while none fell at several stations.—*Alexander G. McAdie.*

Colorado.—The mean temperature was 52.2°, or 1.6° below normal; the highest was 100°, at Fort Morgan on the 25th, and the lowest, 3°, at Wagon Wheel Gap on the 3d. The average precipitation was 0.62, or

1.71 below normal; the greatest monthly amount, 2.93, occurred at Le Roy, while none fell at Perry Park and Rangely.—*F. H. Brandenburg.*

Florida.—The mean temperature was 78.5°, or 2.9° above normal; the highest was 101°, at Archer on the 18th, and the lowest, 52°, at Wausau on the 1st. The average precipitation was 1.22, or about 2.80 below normal; the greatest monthly amount, 4.03, occurred at McClenny, and the least, 0.13, at Tarpon Springs.—*A. J. Mitchell.*

Georgia.—The mean temperature was 75.2°, or 3.6° above normal; the highest was 101°, at Fleming on the 21st and 22d, and the lowest, 41°, at Diamond on the 10th. The average precipitation was 1.76, or 1.36 below normal; the greatest monthly amount, 5.44, occurred at Maury, and the least, 0.54, at Morgan.—*J. B. Marbury.*

Idaho.—The mean temperature was 48.4°, or 4.2° below normal; the highest was 88°, at Hagerman on the 23d, and the lowest, 6°, at Lake on the 2d and at Marysville on the 3d. The average precipitation was 1.60, or 0.49 below normal; the greatest monthly amount, 3.50, occurred at Kootenai, and the least, 0.35, at Burnside.—*S. M. Blundford.*

Illinois.—The mean temperature was 64.0°, or 1.3° above normal; the highest was 93°, at New Burnside on the 15th and at Equality on the 26th, and the lowest, 33°, at Lanark on the 21st. The average precipitation was 6.06, or 1.81 above normal; the greatest monthly amount, 13.10, occurred at Griggsville, where 5.33 fell in the storm of the 28th; the least amount, 1.84, occurred at Chester.—*C. E. Linney.*

Indiana.—The mean temperature was 64.4°, or 2.4° above normal; the highest was 96°, at Washington on the 4th, and the lowest, 36°, at Delphi on the 5th. The average precipitation was 3.95, or 0.22 below normal; the greatest monthly amount, 8.15, occurred at Vevay, and the least, 1.85, at Princeton.—*C. F. R. Wappenhans.*

Iowa.—The mean temperature was 60.2°, or slightly above normal; the highest was 90°, at Desoto on the 26th, and the lowest, 27°, at Larabee and Spencer on the 13th. The average precipitation was 6.23, or about 2.00 above normal; the greatest monthly amount, 11.47, occurred at Keokuk, and the least, 3.09, at Ridgeway.—*J. R. Sage, Director; G. M. Chappel, Assistant.*

Kansas.—The mean temperature was 67.4°, or 3.0° above normal; the highest was 105°, at Eureka Ranch on the 14th, and the lowest, 24°,

at Colby on the 1st. The average precipitation was 3.68, or 0.38 below normal; the greatest monthly amount, 8.43, occurred at Campbell, and the least, 0.26, at Macksville.—*T. B. Jennings.*

Kentucky.—The mean temperature was 68.8°, or about 3.0 above normal; the highest was 94°, at Paducah on the 15th and at Owensboro and Williamsburg on the 16th; the lowest was 42°, at Catlettsburg, Jackstown, and Maysville on the 14th and at Owenton on the 23d. The average precipitation was 4.79, or 0.71 above normal; the greatest monthly amount, 8.16, occurred at Earlington, and the least, 2.10, at Frankfort.—*H. B. Hersey.*

Louisiana.—The mean temperature was 77.7°, or 3.5° above normal; the highest was 100°, at Liberty Hill on the 29th, and the lowest, 49°, at Mansfield on the 5th. The average precipitation was 0.98, or 2.29 below normal; the greatest monthly amount, 5.84, occurred at Plain Dealing, while none fell at Como and Lake Charles.—*W. T. Blythe.*

Maryland and Delaware.—The mean temperature was 63.7°, or normal; the highest was 96°, at Milford, Del., on the 28th, and at Chews-ville, Md., on the 29th; the lowest was 31°, at Deepark, Md., on the 21st, and at Grantsville, Md., on the 22d. The average precipitation was 3.34, or 0.86 below normal; the greatest monthly amount, 7.42, occurred at Grantsville, Md., and the least, 1.51, at Princess Anne, Md.—*F. J. Wale.*

Michigan.—The mean temperature was 56.3°, or 1.9° above normal; the highest was 91°, at Clinton, Lenawee County, on the 2d, and the lowest, 18°, at Grayling, Crawford County, on the 14th. The average precipitation was 3.72, or 0.31 above normal; the greatest monthly amount, 7.52, occurred at Calumet, Houghton County, and the least, 1.05, at East Tawas, Iosco County.—*C. F. Schneider.*

Minnesota.—The mean temperature was 55.1°, or about normal; the highest was 90°, at Milan and Montevideo on the 26th, and the lowest, 20°, at Mount Iron on the 13th. The average precipitation was 4.46, or about 1.00 above normal; the greatest monthly amount, 7.99, occurred at Park Rapids, and the least, 1.51, at Lake Jennie.—*T. S. Outram.*

Mississippi.—The mean temperature was 75.0°, or about 2.5 above normal; the highest was 1.01°, at Brookhaven on the 16th, and the lowest, 50°, at Okolona on the 25th and 26th. The average precipitation was 1.81, or about 2.25 below normal; the greatest monthly amount, 5.90, occurred at Thornton, while none fell at Natchez.—*H. E. Wilkinson.*

Missouri.—The mean temperature was 66.9°, or 2.4° above normal; the highest was 96°, at Jefferson City on the 27th, and the lowest, 34°, at Elmira on the 4th. The average precipitation was 6.24, or 0.85 above normal; the greatest monthly amount, 11.38, occurred at Sublett, and the least, 3.08, at Eightmile.—*A. E. Hackett.*

Montana.—The mean temperature was 45.0°, or 4.9° below normal; the highest was 80°, at Glendive on the 25th, and the lowest, 7°, at Adel on the 3d. The average precipitation was 2.63, or 0.49 above normal; the greatest monthly amount, 6.19, occurred at St. Pauls, and the least, 0.14, at Corvallis.—*E. J. Glass.*

Nebraska.—The mean temperature was 59.6°, or 0.3° above normal; the highest was 100°, at Lynch on the 11th and at Palmer on the 27th, and the lowest, 21°, at Camp Clarke on the 4th. The average precipitation was 3.71, or 0.10 above normal; the greatest monthly amount, 8.30, occurred at Norfolk, and the least, 0.15, at Seneca.—*G. A. Loveland.*

Nevada.—The mean temperature was 49.7°, or about 5.0° below normal; the highest was 96°, at Verdi on the 10th, and the lowest, 10°, at Empire Ranch on the 3d. The average precipitation was 0.68, or about 0.49 below normal; the greatest monthly amount, 1.75, occurred at Fencelon, while none fell at Las Vegas.—*J. H. Smith.*

New England.—The mean temperature was 55.7°, or 0.4° above normal; the highest was 94°, at Claremont, N. H., and Lake Cochituate, Mass., on the 1st, and the lowest, 22°, at Flagstaff, Me., and Grafton, N. H., on the 4th. The average precipitation was 1.79, or 2.01 below normal; the greatest monthly amount, 4.12, occurred at Orono, Me., and the least, 0.32, at Concord, N. H. The drought that has prevailed during April and May has had a direful effect upon agricultural operations.—*J. W. Smith.*

New Jersey.—The mean temperature was 61.1°, or 0.3° above normal; the highest was 94°, at Paterson, Vineland, Bridgeton, and Egg Harbor on the 28th; the lowest, 29°, at Charlotteburg on the 4th. The average precipitation was 1.92, or 2.26 below normal; the greatest monthly amount, 3.15, occurred at Chester, and the least, 1.15, at Barnegat Lighthouse.—*E. W. McGann.*

New Mexico.—The mean temperature was 59.8°, or 1.7° below normal; the highest was 104°, at Eddy on the 12th, and the lowest, 11°, at Fort Wingate and Monero on the 3d. The average precipitation was 0.11, or 0.90 below normal; the greatest monthly amount, 0.60, occurred at Albert, while out of a total of 37 stations 14 reported no precipitation, and 9 only a trace.—*R. M. Hardinge.*

New York.—The mean temperature was 57.2°, or 0.7° above normal; the highest was 92°, at Penn Yan and Waverly on the 1st and at Cedar Hill on the 2d, and the lowest, 19°, at Plattsburg Barracks on the 5th. The average precipitation was 2.90, or 0.88 below normal; the greatest monthly amount, 5.07, occurred at Volusia, and the least, 0.88, at Lake Placid.—*R. G. Allen.*

North Carolina.—The mean temperature was 68.3°, or 1.3° above normal; the highest was 98°, at Southern Pines on the 3d, and the lowest, 33°, at Linnville on the 25th. The average precipitation was 3.33, or

0.85 below normal; the greatest monthly amount, 5.30, occurred at Bryson, and the least, 1.54, at Mana.—*C. F. von Herrmann.*

North Dakota.—The mean temperature was 49.7°, or 3.9° below normal; the highest was 91°, at Wahpeton on the 27th, and the lowest, 16°, at Power on the 13th. The average precipitation was 3.54, or 0.90 above normal; the greatest monthly amount, 7.79, occurred at Berthold Agency, and the least, 1.26, at Portal.—*B. H. Bronson.*

Ohio.—The mean temperature was 63.3°, or 2.4° above normal; the highest was 96°, at Logan on the 3d, and the lowest, 28°, at Wooster on the 22d. The average precipitation was 4.32, or 0.69 above normal; the greatest monthly amount, 7.14, occurred at Hillhouse, and the least, 1.64, at New Paris.—*J. Warren Smith.*

Oklahoma.—The mean temperature was 71.4°, or 3.5° above normal; the highest was 98°, at Beaver on the 14th, and the lowest, 37°, at Hennessey on the 4th. The average precipitation was 6.00, or 0.70 above normal; the greatest monthly amount, 12.30, occurred at Pawhuska, and the least, 1.35, at Beaver.—*J. I. Widmeyer.*

Oregon.—The mean temperature was 49.8°, or 4.5° below normal, the lowest on record; the highest was 90°, at New Bridge on the 26th, and the lowest, 18°, at Lakeview on the 1st and at Silverlake on the 12th. The average precipitation was 2.96, or 0.13 above normal; the greatest monthly amount, 9.32, occurred at Bay City, and the least, trace, at Blalocks and Lorella.—*B. S. Pague.*

Pennsylvania.—The mean temperature was 61.1°, or 1.6° above normal; the highest was 100°, at Derry Station on the 1st, and the lowest, 24°, at Whitehaven on the 4th. The average precipitation was 3.82, or 0.86 below normal; the greatest monthly amount, 6.40, occurred at Warren, and the least, 1.15, at Lansdale.—*T. F. Townsend.*

South Carolina.—The mean temperature was 73.7°, or 2.9° above normal; the highest was 100°, at Temperance on the 18th and 19th, and the lowest, 45°, at Walhalla on the 25th and at Holland on the 26th and 29th. The average precipitation was 1.68, or 2.34 below normal; the greatest monthly amount, 3.72, occurred at Pinopolis, and the least, 0.53, at Camden.—*J. W. Bauer.*

South Dakota.—The mean temperature was 55.7°, or about normal; the highest was 92°, at Cherry Creek and Gannvalley on the 11th and at Forest City on the 29th, and the lowest, 20°, at Rochford on the 3d and at Leola on the 13th. The average precipitation was 4.45, or 1.21 above normal; the greatest monthly amount, 8.70, occurred at Aberdeen, and the least, 2.10, at Forest City.—*S. W. Glenn.*

Tennessee.—The mean temperature was 71.2°, or about 4.5 above normal; the highest was 98°, at Dover on the 15th, and the lowest, 40°, at Erasmus on the 20th and at Silverlake on the 25th. The average precipitation was 3.79, or slightly below normal; the greatest monthly amount, 6.72, occurred at Erasmus, and the least, 1.05, at Waynesboro.—*H. C. Bate.*

Texas.—The temperature on an average for the month, determined by comparison of 44 stations distributed throughout the State, was 2.8° above the normal; there was a slight deficiency over the panhandle and the mountainous portions of west Texas, while there was a general excess over the other portions of the State, with the greatest over east Texas. The highest was 103°, at Camp Eagle Pass on the 12th, and the lowest, 34°, at Tulia on the 3d. The precipitation on an average for the month, determined by comparison of 52 stations distributed throughout the State, was 0.76 below the normal. There was a general deficiency, amounting to more than 2.00 inches in many localities, except over the panhandle and the northern portion of east Texas, where there was an excess; the greatest monthly amount, 6.87, occurred at Longview, while none fell at Fort Stockton, Point Isabel, and Sabine Pass.—*I. M. Chene.*

Utah.—The mean temperature was 52.8°, or 4.4° below normal; the highest was 96°, at Pahreah on the 10th, and the lowest, 15°, at Grover on the 3d and Loa and Pinto on the 2d. The average precipitation was 0.79, or 0.58 below normal; the greatest monthly amount, 2.59, occurred at Salt Lake City, while none fell at Castle Dale.—*L. H. Murdoch.*

Virginia.—The mean temperature was 65.8°, or about 1.0° above normal; the highest was 99°, at Leesburg on the 31st, and the lowest, 30°, at Marion on the 25th. The average precipitation was 3.48 or 1.01 below normal; the greatest monthly amount, 6.75, occurred at Marion, and the least, 1.30, at Leesburg.—*E. A. Evans.*

Washington.—The mean temperature was 51.3°, or about 4.0° below normal; the highest was 88°, at Lind on the 23d, and the lowest, 16°, at Waterville on the 1st. The average precipitation was 2.85, or 0.40 above normal; in the western section there was an excess of about 1.30, while in the eastern section there was a general deficiency; the greatest monthly amount, 10.87, occurred at Clearwater, and the least, 0.05, at Connell.—*G. N. Salisbury.*

West Virginia.—The mean temperature was 64.1°, or 1.4° above normal; the highest was 96°, at Point Pleasant on the 3d, and the lowest, 35°, at Terra Alta on the 23d and at Uppertract on the 25th. The average precipitation was 5.17, or 0.86 above normal; the greatest monthly amount, 7.68, occurred at Marlinton, and the least, 3.17, at New Martinsville.—*C. M. Strong.*

Wisconsin.—The mean temperature was 55.8°, or slightly above normal; the highest was 88°, at Sharon on the 1st, and the lowest, 25°, at Florence on the 15th. The average precipitation was 4.21, or 0.40 above

normal; the greatest monthly amount, 8.47, occurred at Eau Claire, and the least, 1.08, at Lincoln.—*W. M. Wilson.*

Wyoming.—The mean temperature was 47.8°, or 2.8 below normal; the highest was 87°, at Basin on the 11th and 18th, and the lowest, 10°, at Dome Lake on the 2d and at Burns on the 3d. The average precipitation was 1.83 or 0.20 below normal; the greatest monthly amount, 4.74, occurred at Sheridan, and the least, 0.05, at Wamsutter.—*W. S. Paumer.*

SPECIAL CONTRIBUTIONS.

RECENT PAPERS BEARING ON METEOROLOGY.

W. F. R. PHILLIPS, in charge of Library, etc.

The subjoined list of titles has been selected from the contents of the periodicals and serials recently received in the library of the Weather Bureau. The titles selected are of papers or other communications bearing on meteorology or cognate branches of science. This is not a complete index of the meteorological contents of all the journals from which it has been compiled; it shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau:

Symons Meteorological Journal. London. Vol. 34.

—Ozone. P. 50.

Cross, Robert. Whirlwind at Worstead, Norfolk, March 20, 1899. P. 51.

Journal de Physique. Paris. 3me Série. Tome 8.

Pellat, H. Perte d'électricité par évaporation de l'eau électrisée. Vapeur émise par un liquide non-électrisé. Application à l'électricité atmosphérique. Influence des fumées. P. 253.

Comptes Rendus. Paris. Tome 128.

Bonnier, G. Caractères anatomiques et physiologiques des plantes rendues artificiellement par l'alternance des températures extrêmes. P. 1143.

Le Cadet, G. Sur l'ascension du *Balaschoff* exécutée le 24 Mars, 1899. P. 1192.

Zeitschrift für Luftschiffahrt u. Phys. d. Atm. Berlin. 18 Jahrg.

Dientsbach, K. A. M. Herring's neue Flugversuche. P. 73.

Meteorologische Zeitschrift. Wien. Band 16.

Bergholz, P. Die Taifune vom 9 und 29 September, 1897. P. 145.

Edvi, E. I. v. Die Lage der Isotherme von 0° C. P. 157.

Schwab, Fr. Beobachtung eines Halo-Phänomenes. P. 164.

Schamberger, H. Sonnenringe. P. 165.

Meinardus, W. Der Eisregenfall vom 20 Oktober, 1898, über Mittel- und Ostdeutschland. P. 165.

—Beschädigung der Telegraphen- und Fernsprechanlagen im Kreise Waldenburg durch Eisbelastung und Baumbruch. P. 171.

Supan, A. Die jährlichen Niederschlagsmengen auf den Meeren. P. 173.

—Klima von Galveston, Tex. P. 173.

Hiratsuka, O. Harmonische Analyse der täglichen Variation der Deklination zu Tokio. P. 178.

Nippoldt, A., Jr. Bemerkung zu vorliegender Arbeit. P. 179.

Mazelle, E. Berichtigung zu SW.-Sturm in Triest. P. 180.

Scientific American. New York. Vol. 80.

Dexter, E. G. Crime and the Weather. P. 19592.

L'Aérophile. Paris. 7 année.

Minniôt, W. Les ballons-sondes de M. Teisserence de Bort. P. 38.

Hermite, G. Le lancer de l' "Aérophile" No. 3, 24 Mars, 1899. P. 38.

Besancon, G. L'ascension du "Balaschoff," 24 Mars, 1899. P. 41.

Le Cadet, G. Sur l'ascension du "Balaschoff," 24 Mars, 1899. P. 42.

Astrophysical Journal. Chicago. Vol. 9.

Angstrom, K. Absolute Determination of the Radiation of Heat with the Electric Compensation Pyrheliometer. P. 332.

Das Wetter. Berlin. 16 Jahrg.

Sprung, A. Auffällige Strahlungstemperaturen. P. 83.

Clayton, H. H. Studien über cyclonale und anticyklonale Erscheinungen vermittelst Drachen am Blue Hill Observatory. P. 85 und 114.

Fajdiga, I. Die atmosphärische Electricität und der Blitzableiter. P. 45, 69, 92, 116.

Geographical Journal. London. Vol. 13. 1899.

Cornish, V. Kumatology (Study of waves and wave structure of the atmosphere, hydrosphere, and lithosphere). P. 624.

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OBSERVATIONS AT RIVAS, NICARAGUA.

The records contributed for many years by Dr. Earl Flint, at Rivas, Nicaragua, include barometric readings. His present station is at 11° 26' N., 85° 47' W. The observations at 7:17 a. m., local time, are simultaneous with Greenwich 1 p. m. The altitude of his barometer is 36 meters above sea level, but until the barometer has been compared with a standard it seems hardly necessary to publish the daily readings. The wind force is recorded on the Beaufort scale, 0-12. When cloudiness is less than $\frac{1}{10}$, the letter "F," or "Few," is recorded.

This station is situated on the western shore of Lake Nicaragua, not far from the eastern end of the western division of the Nicaragua Canal. The volcano Ometepe, on an island in Lake Nicaragua, is about 10 miles northeast of the station. Mr. Flint's records occasionally mention the presence of clouds on the summit of this mountain.

Dr. Flint's reports to the Weather Bureau now embrace two distinct features, namely, the simultaneous morning observations and the daily climatological summary, as given in the two following tables for each month.

Simultaneous observations at 1 p. m. Greenwich (or 7:17 a. m. local) time, April, 1899.

Date.	Temperature.		Wind.		Upper clouds.			Lower clouds.		
	Alr.	Dew-point.	Direction.	Force.	Kind.	Amount.	Direction from.	Kind.	Amount.	Direction from.
1.....	79	73	ne.	5	c.	10	sw.	k.	1	ne.
2.....	77.5	71	ne.	4	ck.	9	sw.	k.	1	ne.
3.....	78	71	ne.	3	ck.	3	sw.	k.	0.5	ne.
4.....	78	71	ne.	5				k.		ne.
5.....	78	71	ne.	6	c., cs.	10	sw.	k.		ne.
6.....	78.5	71	ne.	4				k.	Few	ne.
7.....	78	70	ne.	4				k.	1	ne.
8.....	78	69	ne.	4				ks.	2	ne.
9.....	78	70	ne.	6	ck.	10	sw.			ne.
10.....	78	71	ne.	4				k.	10	ne.
11.....	74.5	67	ne.	7				ks.	1	ne.
12.....	78	70	ne.	5	cs., ks.	8	sw.	f. k.	1	ne.
13.....	78	69	ne.	5				k.	2	ne.
14.....	76.5	72	ne.	8				kn.	10	ne.
15.....	77	70	ne.	8				k.	6	ne.
16.....	78	71	ne.	2	cs.	Few	sw.			ne.
17.....	79	72	ne.	3				k.	5	ne.
18.....	79.5	72	ne.	3				k.	4	ne.
19.....	80	71	ne.	2				k.	5	ne.
20.....	79	75	ne.	1	cs.	1	sw.	k.	9	ne.
21.....	81.5	77	ne.	1	ck.		sw.	k.	3	ne.
22.....	80.5	73	ne.	5	ck.		sw.	k.	10	ne.
23.....	79	72	ne.	6				f. k.	2	ne.
24.....	80	72	ne.	6				k.	5	ne.
25.....	80.5	73	ne.	5	cs.	2		k.	1	ne.
26.....	81	73	ne.	6				k.	1	ne.
27.....	81	73	ne.	4				k.	1	ne.
28.....	79	72	ne.	4				k.	1	ne.
29.....	79.5	73	ne.	3	cs.		se.	k.	1	ne.
30.....	78	71	ne.	4				f. k.	Few	ne.
Sums.....										
Means.....	78.6									

*Cumuli on Ometepe.